

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method ~~of~~ for determining the consumption of oil consumption coming from ~~the~~ an oil separation system ~~(2)~~ located in ~~the~~ a circuit for recycling the blowby gases of an internal combustion engine, ~~characterized in that~~ comprising:
 - labeling the lubricating oil for said internal combustion engine ~~is labeled by~~ introducing at least one radioactive tracer into said lubricating oil;
 - passing the blowby gases, leaving the engine block ~~(1)~~ and laden with lubricating oil, ~~are made to pass through an~~ the oil separation system, ~~(2)~~ where wherein at least some of the oil contained within said blowby gases is separated, collected and returned to ~~the~~ an oil sump ~~(6)~~;
 - subsequently bringing ~~the oil not separated from~~ the blowby gases coming from the oil separation system ~~(2)~~ is trapped to ~~in~~ an oil trapping device ~~(4)~~ located downstream of said oil separation system, whereby the oil not separated from the blowby gases coming from the oil separation system is retained in the oil trapping device ~~(2)~~;
 - measuring the radioactivity of the oil ~~not separated in the oil separation system~~ ~~(2)~~ and retained in the oil trapping device ~~(4)~~ is measured by using a detector ~~(3)~~, which is placed near the oil trapping device ~~(4)~~ and is sensitive to the ionizing

radiation emitted by the radioactive tracer(s); and

- transmitting the results of these measurements ~~are sent to a computer (5)~~
capable of calculating the consumption of lubricating oil not separated in said
separation system ~~(2)~~ from these results.

2. (currently amended): The method as claimed in claim 1, ~~characterized in that wherein~~
the oil separation system ~~(2)~~ comprises ~~consists of~~ several separators connected in series
or in parallel.
3. (currently amended): The method as claimed in claim 1 ~~either of the preceding claims,~~
~~characterized in that~~ further comprising releasing the blowby gases coming from the
trapping device ~~(4)~~ are released into the atmosphere or ~~sent to the~~ an intake (D) of the
internal combustion engine.
4. (currently amended): The method as claimed claim 1, ~~in any one of the preceding claims,~~
~~characterized in that wherein~~ the oil trapping device ~~(4)~~ is a second separation system
comprising one or more static separation elements and/or one or more cyclones and/or
one or more filtering elements.
5. (currently amended): The method as claimed in claim 1, ~~any one of the preceding claims,~~
~~characterized in that wherein~~ the oil trapping device ~~(4)~~ is designed so that the pressure
difference (ΔP) between the inlet of the oil separation system ~~(2)~~ and the outlet of the oil
separation system ~~(2)~~ is substantially the same as the value of this pressure difference in

the absence of the trapping device.

6. (currently amended): The method as claimed in claim 1, ~~any one of the preceding claims,~~
~~characterized in that~~wherein the radioactive tracer is an organic or mineral compound of
a radioactive element.
7. (currently amended): The method as claimed in claim 1, ~~one of the preceding claims,~~
~~characterized in that~~wherein the radioactive element has a period, or half-life, of less
than 3 years, ~~preferably less than 1 year and in particular less than 30 days.~~
8. (currently amended): The method as claimed in claim 7, ~~characterized in that~~wherein
the radioactive element is selected from the group consisting of ~~chosen from~~ ^{22}Na , ^{65}Zn ,
 ^{45}Ca , ^{35}S , ^{32}P , ^{47}Ca , ^{99}Mo , ^{82}Br , ^{64}Cu , $^{99\text{m}}\text{Tc}$, ^{28}Mg , ^{68}Ge , ^{69}Ge , ^{77}Ge , ^{85}Sr and ^{56}Co .
9. (currently amended): The method as claimed in claim 8, ~~characterized in that~~wherein
the radio tracer is ~~chosen from~~selected from the group consisting of tetra-alkylgermanes
containing ^{69}Ge , ~~preferably from tetrahexylgermane, tetraheptylgermane and~~
~~tetraoctylgermane, or a mixture thereof.~~
10. (currently amended): The method as claimed in claim 8, ~~characterized in that~~wherein
the radio tracer is $^{99\text{m}}\text{Tc}$, ~~preferably in the form of an aqueous solution of sodium~~
~~pertechnetate NaTcO_4 or in the form of nanoscale particles isolated from the atmosphere~~
~~by carbon.~~

11. (currently amended): The method as claimed in claim 1 ~~any one of the preceding claims,~~
~~characterized in that~~ wherein the detector is an ionizing radiation detection probe.
12. (currently amended): A device for determining the consumption of oil coming from ~~the~~
an oil separation system ~~(2)~~ located in ~~the~~ a circuit for recycling ~~the~~ blowby gases of an
internal combustion engine, ~~characterized in that it comprises~~ comprising:
- an internal combustion engine lubricated by an oil labeled by introducing at least one
radioactive tracer into said oil;
 - an oil separation system ~~(2)~~ that receives the blowby gases laden with lubricating oil
leaving the engine block ~~(1)~~, where at least some of the oil contained in said blowby
gases is separated, collected and returned to the oil sump;
 - downstream of the oil separation system ~~(2)~~, an oil trapping device ~~(4)~~;
 - a detector ~~(3)~~ sensitive to the ionizing radiation emitted by the radioactive tracer(s),
located in the immediate vicinity of the trapping device ~~(4)~~, so as to measure the
radioactivity of the oil not Separated in the oil separation system ~~(2)~~ but retained in the
oil trapping device ~~(4)~~; and
 - connected to said detector ~~(3)~~, a computer ~~(5)~~ programmed for calculating the
consumption of lubricating oil not separated in said separation system ~~(2)~~ from the results
of the radioactivity measurements.
13. (currently amended): The device as claimed in claim 12, characterized in that the oil
trapping device ~~(4)~~ is designed in such a way that the pressure difference (ΔP) between
the inlet and the outlet of the oil separation system ~~(2)~~ is approximately the same as the

value of this pressure difference in the absence of said oil trapping device.

14. (new): The method as claimed in claim 1, wherein the radioactive element has a period, or half-life, of less than 1 year.
15. (new): The method as claimed in claim 1, wherein the radioactive element has a period, or half-life, of less than 30 days.
16. (new): The method as claimed in claim 8, wherein the radio tracer is selected from the group consisting of tetrahexylgermane, tetraheptylgermane and tetraoctylgermane, and mixtures thereof.
17. (new): The method as claimed in claim 8, wherein the radio tracer is ^{99m}Tc in the form of an aqueous solution of sodium pertechnetate NaTcO_4 or in the form of nanoscale particles isolated from the atmosphere by carbon.